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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/596,851	06/19/2000	Gary M. Diamond	99-109	4220

22905 7590 08/24/2005

SYMYX TECHNOLOGIES INC
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EXAMINER	
TRAN, MY CHAU T	

ART UNIT	PAPER NUMBER
1639	

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/596,851	DIAMOND ET AL.	
	Examiner	Art Unit	
	MY-CHAU T. TRAN	1639	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 June 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *16,19-38,40,42-58 and 70-76* is/are pending in the application.

4a) Of the above claim(s) *20-23,27,29,34-36,40,44,46-49,51-58,71 and 72* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *16,19,24-26,28,30-33,37,38,42,43,45,50,70 and 73-76* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 June 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Note: The examiner for your application in the PTO has changed. However, the Group and/or Art Unit location of your application in the PTO is remained the same, which is Group Art Unit 1639.

Application and Claims Status

1. Applicant's response filed 06/08/2005 is acknowledged and entered.

2. Claims 17 and 41 were cancelled; Claims 16, 24, 25, 33, 42, and 70 were amended; and Claims 73-76 were added by the amendment filed on 10/19/2004.

3. Claim 17 was amended and Claims 70-72 were added by the amendment filed on 01/14/2004.

4. Claims 1-15, 18, 39, and 59-69 were cancelled and Claims 16 and 42 were amended by the amendment filed on 09/23/2002.

5. Claims 16, 25-28, and 41 were amended by the amendment filed on 03/01/2002.

6. Claims 16, 19-38, 40, 42-58, and 70-76 are pending.

Election/Restrictions

7. Applicant has elected the following species for the elected invention (Claims 16, 19-38, 40, 42-58, and 70-76) in the reply filed on 10/15/2001 and 02/28/2002 is again acknowledged:

a. Species of Method further comprising: copolymerizing 1st and 2nd monomers.

b. Species of dispensing: "liquid" dispensing.

c. 1st Species of determining polymerization performance (or property): "product"/ "molecular weight".

d. 2nd Species of determining polymerization performance (or property): "reaction mixture"/ "polymer concentration".

e. Species of monomer: "1-octene"

Note: the "polymerizing 2nd monomer" and "polymerizing a 2nd monomer with a 3rd monomer corresponds to non-elected subject matter in view of the election in (a) above.

8. Accordingly, claims 20-23, 27, 29, 34-36, 40, 44, 46-49, 51-58 and 71-72 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b) as being drawn to non-elected species, there being no allowable generic claim. It is noted that new claims 71 and 72 are withdrawn from consideration by election of original presentation (e.g. claims 71 and 72 are drawn to nonelected subject matter).

9. Claims 16, 19, 24-26, 28, 30-33, 37, 38, 42-43, 45, 50, 70 and 73-76 are under consideration in this Office Action.

Maintained Rejection(s)

Claim Rejections - 35 USC § 112

10. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

11. Claim 70 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a written description rejection.

Claim Rejections - 35 USC § 103

12. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

13. Claim 70 is rejected under 35 U.S.C. 103(a) as being unpatentable over Van Tol et al (WO 97/42232 - on PTO-1449) and Willson (WO 97/32208 - on PTO-1449).

14. Claims 16, 19, 24-26, 28, 30-33, 37, 38, 42-43, 45, 50, 70 and 73-76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lundeen et al. US Pat. No. 5,236,998 and Weinberg et al. US Pat. No. 6,756,195 96/04: filed 7/97 or earlier).

15. Claims 16, 19, 24-26, 28, 30-33, 37, 38, 45, 50, 70 and 73-74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Tol et al (WO 97/42232 - on PTO-1449), Willson

(WO 97/32208 - on PTO-1449) and Weinberg et al. US Pat. No. 6,756,195 96/04: filed 7/97 or earlier).

Withdrawn Rejection(s)

16. The rejection of claims 16, 19, 24-26, 28, 30-33, 37, 38, 42-43, 45, 50, 70 and 73-76 under 35 USC 112, first paragraph (Lack of Written Description), has been withdrawn in light of applicant's arguments.

Response to Arguments

17. Applicant's argument directed to the rejection under 35 U.S.C. 112, first paragraph (written description), for claim 70 has been fully considered but they are not persuasive for the following reasons.

> *Claim 70 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a written description rejection.*
>
> *To satisfy the written description requirement, an applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. Applicant's claims are directed to a method of screening potential catalysts where polymerization performance of one monomer is used "as a predictor for the polymerization performance" of other monomers. The prediction step is a mental step and there are a virtually unlimited number of acts that could read on this step. The method steps are set forth in generic language and no details on how they are to be carried out are set forth in the instant specification.*
>
> *The above terminology without any description and/or exemplification of how the steps are to be carried out and how they are interrelated to achieve the object of the invention, does constitute a written description problem in the instant case as it is completely unclear that applicant was in possession of the claimed genus of prediction and planning. Applicant's claimed scope represents only an invitation to experiment regarding possible prediction and planning steps. The language of the specification should describe the claimed invention so that one skilled in the art can recognize what is claimed. The disclosure must allow one skilled in the art to visualize or recognize the identity of the subject matter purportedly described.*
>
> *Therefore it is deemed that the disclosure is neither representative of the claimed genus, nor does it represent a substantial portion of the claimed genus and that there is not adequate support in the instant specification for the claimed genus or a substantial portion thereof.*

Applicant argues that claim 70 is supported by the entirety of the specification as filed because there is no prediction step claimed, and the preamble describes the use of the invention, i.e., that the invention is a method of screening potential catalysts for polymerization performance wherein '*the polymerization performance of the potential catalysts is determine for at least a first monomer as a predictor for the polymerization performance of the potential catalysts for at least a second monomer*'. Thus, claim 70 does not lack written description.

Applicant's arguments are not convincing since claim 70 is not supported by the entirety of the specification as filed there is a prediction step claimed. The limitation of '*the polymerization performance of the potential catalysts is determine for at least a first monomer as a predictor for the polymerization performance of the potential catalysts for at least a second monomer*' in the preamble does not merely recites the purpose of the claimed process but rather give meaning to the presently claimed method step of '*determining the polymerization performance of each of the potential catalysts with the at least first monomer in the first reaction*', i.e. the first monomer is use as a 'predictor' for the first reaction of the 8 potential catalyst. Thus, the instant claimed method does include a predictor step, and claim 70 is not supported by the entirety of the specification as filed. The rejection is maintained.

18. Applicant's arguments directed to the rejection under 35 USC 103(a) as being unpatentable over Van Tol et al. (WO 97/42232 - on PTO-1449) and Willson (WO 97/32208 - on PTO-1449) for claim 70 were considered but they are not persuasive for the following reasons.

Claim 70 is rejected under 35 U.S.C. 103(a) as being unpatentable over Van Tol et al. (WO 97/42232 - on PTO-1449) and Willson (WO 97/32208 - on PTO-1449).

Van Tol et al teach a method for polymerization of alpha olefins using various catalysts (see Abstract). The method is first carried out with the monomer of octene (reading on the limitations of the instant 37, 38 and 41), see page 28, beginning on line 9. The method is then carried out with octene and other monomers, see Example II beginning on page 28, line 26. Octene and ethylene are polymerized in Example III of the reference (page 31). Since Van Tol et al starts off by only using octene and then goes on to use other monomers in their polymerization process, this is deemed to read on the limitation where the "polymerization performance of the potential catalysts is determined for at least a first monomer as a predictor for the polymerization performance of the potential catalysts for at least a second monomer" of claim 16 and also the limitations of claim 17. Note that Van Tol et al characterize the octane polymer by determining molecular weight and unsaturation (NMR) {Example I} and others by amount of polymer produced {Example II}. The other polymers made by incorporation of other monomers were also characterized. The reference's various classifications of different catalyst's performance while polymerizing different reactions involving olefins other than ethylene (e.g. octane) are within the scope of obtaining " a figure of merit for a particular property" addressing a particular catalysts polymerization performance. This reads on the limitations in instant claims 19, 30, 45, 50 73 and 74. The Van Tol reactions were quenched to stop the polymerization after a two hour period (page 28, lines 16-18), reading on the limitations of claim 31 and 32. Van Tol et al teach a variety of catalyst systems, see page 33, Table 1 of the reference.

Although, the Van Tol examples only illustrate three different alpha-olefins and three different catalysts it's clear from the reference teaching as a whole that screening multiple alpha-olefins is taught by the reference. See e.g. "at least one" terminology and WO claims 1, 13 and 14 regarding "at least one" terminology related to polymerization and copolymerizations as exemplified. Similarly, although only three catalysts are exemplified, it is clear that the reference teaches the screening of a generic of catalyst candidates greater than 3, and indeed well within the scope of "at least 8 potential polymerization catalysts", as presently claimed. See e.g. abstract definition of catalyst and the WO claims, especially claim 1.

Although teach parallel polymerization (e.g. page 25, lines 28-35), Van Tol et al lack the specifics of testing an "array of at least 8 potential polymerization catalysts" by "concurrent reaction" (claim 16) and the limitations of claims 24-26, 28, 33, 42 and 43 concerning testing arrays, array format, number of elements in the array and time per assay.

However, the findings of In re Aller should be considered: "where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Moreover, various formats for preparing and testing collections of catalysts were well known in the art at the time of filing. Willson teaches a multicell holder for assembling and testing large numbers of catalysts as cells, spots or pellets (see Abstract; Figure 1 and page 2, lines 14-29). In preparing Willson's arrays of catalysts, "the catalyst candidate precursors can be deposited...by any convenient technique, preferably by pipette or absorbing stamp...In preferred embodiments, the deposition process will be under robotic control, similar to that used to load multicell plates in biochemical assays" (page 4, top). Willson also teaches that robotic techniques can be employed. The reference teaches that their set-up permits "the scanning of dozens of catalysts in a single set-up, often in less time than required for a single catalysts to be evaluated by conventional methods" (page 2, lines 1-11). Willson also teaches that "[o]nce the catalysts are in place on the support, any suitable technique known to the art can be used to stabilize, and/or activate the particular catalysts chosen" (page 4, bottom). The reference teaches that the invention "has utility with any reaction which can be enhanced by the presence of a catalyst ... including ...polymerization reactions..." (page 5, lines 5-11).

Therefore, it would have been prima facie obvious to one of ordinary skill in the art to use the catalysts and methodology of Van Tol et al in a combinatorial type setting (assay) to make and test arrays of catalysts as taught by Willson for polymerization performance based on the results of initial monomer testing (as set forth by Van Tol et al). Willson demonstrates that physical and spatial manipulation of catalyst arrays was well known in the art at the time of filing. The techniques for these manipulations result in a more automated work environment. One of ordinary skill would be motivated to use various automated manipulation techniques known to the combinatorial chemistry art (as evidenced by the teachings of Willson) based on their known advantages. The advantages are specifically taught, for example, in Willson, that is "sharply reduce labor costs per catalyst screened".

Applicant contends that the teachings of Van Tol et al. and Willson do not render the method of the instant claims *prima facie* obvious because neither the teaching of Van Tol et al. nor the teaching of Willson teach identifying olefin polymerization catalysts for further testing as required in the claim and conducting a further olefin polymerization reaction with those identified catalysts using different sets of monomers. Thus, the teaching of Van Tol et al. and Willson do not render the method of the instant claims *prima facie* obvious.

Applicant's arguments are not convincing since the combine teachings of Van Tol et al. and Willson do render the method of the instant claims *prima facie* obvious. It is the examiner positions that the method of the instant claims does not claim the step of identifying olefin polymerization catalysts for further testing. The method of the instant claim 70 recites the step of '*determining the polymerization performance of each of the potential catalysts with the at least first monomer in the first reaction*', which is taught by Van Tol et al. as discussed in the rejection and previous argument.

Additionally, the teaching of Van Tol et al. do teach the step conducting a further olefin polymerization reaction with those identified catalysts using different sets of monomers (see e.g. pg. 26-32, Example I, Example II, and Example III; pg. 32, lines 5-26).

Therefore, the combine teachings of Van Tol et al. and Willson do render the method of the instant claims *prima facie* obvious, and the rejection is maintained.

19. Applicant's arguments directed to the rejection under 35 USC 103(a) as being unpatentable over Lundeen et al. US Pat. No. 5,236,998 and Weinberg et al. US Pat. No.

6,756,195 96/04: filed 7/97 or earlier) for claims 16, 19, 24-26, 28, 30-33, 37, 38, 42-43, 45, 50, 70 and 73-76 were considered but they are not persuasive for the following reasons.

Claims 16, 19, 24-26, 28, 30-33, 37, 38, 42-43, 45, 50, 70 and 73-76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lundeen et al. US Pat. No. 5,236,998 and Weinberg et al. US Pat. No. 6,756,195 96/04: filed 7/97 or earlier).

The presently claimed invention (e.g. claims 16, 42 and 70) is broadly drawn to:

A method for screening 8 catalysts (claim 42) or more (claims 16 or 70) for polymerization performance between a "1st monomer" and a different "2nd monomer comprising:

determining "polymerization performance" in a first "concurrent" polymerization reaction between 8 or more catalysts and a "1st non-ethylene olefinic monomer";

selecting one or more catalysts based on "polymerization performance" in the first polymerization reaction" and reacting the catalyst(s) with "the first monomer" and the "second monomer" to form copolymers (claims 16, 42 and 70) or "higher-order" polymers (claim 70).

It is noted that the structure of the "second polymer" is undefined and the first polymerization encompasses both homopolymerizing the "1st non-ethylene olefinic monomer" AND copolymerizing the "1st non-ethylene olefinic monomer" with one or more additional monomers.

Lundeen discloses parallel olefin (e.g. ethylene) polymerization utilizing the placement of one or more (e.g. two) catalysts (e.g. a library) into two or more physically separate "parallel reactors" possessing a plurality of regions under polymerization conditions for the purposes of optimizing the reaction conditions (e.g. temperature and pressure). The Lundeen process comprises:

determining "polymerization performance" in a first "concurrent" polymerization reaction between 1 or more catalysts (e.g. two) and a "1st non-ethylene olefinic monomer" (e.g. alpha olefin having 3-12 carbon atoms) and ethylene (e.g. a 2nd monomer); and

selecting one or more catalysts (e.g. the same catalysts as in the 1st polymerization) based on "polymerization performance" in the first polymerization reaction" and reacting the catalyst(s) with "the first monomer" (e.g. the alpha olefin having 3-12 carbon atoms) and the "second monomer" (e.g. ethylene to form copolymers (claims 16, 42 and 70) or "higher-order" polymers (claim 70). See e.g. abstract; examples; claims.

The Lundeen reference method differs from the presently claimed method by failing to teach optimized catalyst polymerization utilizing a library of 8 or more catalysts.

However, Weinberg et al. teaches a method for optimizing polymerization of monomers (e.g. alpha olefins) by parallel screening libraries of 8 or more catalysts in order to discover new catalysts or optimize existing catalysts (e.g. "figure of merit"). See abstract; examples, claims.

Thus, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to apply the Weinberg et al. method of parallel screening of larger libraries of catalysts to the Lundeen method in order to discover new catalyst and/or optimize existing catalysts with a reasonable expectation of success.

Applicant alleges that the teachings of Lundeen et al. and Weinberg et al. do not render the method of the instant claims *prima facie* obvious because neither the teaching of Lundeen et al. nor the teaching of Weinberg et al. teach identifying olefin polymerization catalysts for further testing as required in the claim and conducting a further olefin polymerization reaction with those identified catalysts using different sets of monomers. Thus, the teaching of Lundeen et al. and Weinberg et al. do not render the method of the instant claims *prima facie* obvious.

Applicant's arguments are not convincing since the combine teaching of Lundeen et al. and Weinberg et al. do render the method of the instant claims *prima facie* obvious. It is the examiner positions that the step of identifying olefin polymerization catalysts for further testing of claim 16 is part of the "mental step" since it is base on the 'polymerization performance'. Accordingly, the Lundeen et al. reference is consistent with the presently claimed "mental step" of selecting one or more catalysts (e.g. the same catalysts as in the 1st polymerization) based on "polymerization performance" in the first polymerization reaction" and reacting the catalyst(s) with "the first monomer" (e.g. the alpha olefin having 3-12 carbon atoms) and the "second monomer" or "higher-order" polymers (i.e. conducting a further olefin polymerization reaction with those identified catalysts using different sets of monomers) as discussed in the rejection. Also, the step of identifying olefin polymerization catalysts for further testing is not claimed in claim 70. Therefore, the combine teaching of Lundeen et al. and Weinberg et al. do render the method of the instant claims *prima facie* obvious, and the rejection is maintained.

20. Applicant's arguments directed to the rejection under 35 USC 103(a) as being unpatentable over Van Tol et al (WO 97/42232 - on PTO-1449), Willson (WO 97/32208 - on PTO-1449) and Weinberg et al. US Pat. No. 6,756,195 96/04: filed 7/97 or earlier) for claims 16, 19, 24-26, 28, 30-33, 37, 38, 42-43, 45, 50, 70 and 73-76 were considered but they are not persuasive for the following reasons.

Claims 16, 19, 24-26, 28, 30-33, 37, 38, 45, 50, 70 and 73-74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Tol et al (WO 97/42232 - on PTO-1449), Willson (WO 97/32208 - on PTO-1449) and Weinberg et al. US Pat. No. 6,756,195 96/04: filed 7/97 or earlier).

Van Tol et al teach a method for polymerization of alpha olefins using various catalysts (see Abstract). The method is first carried out with the monomer of octene (reading on the limitations of the instant 37, 38 and 41), see page 28, beginning on line 9. The method is then carried out with octene and other monomers, see Example II beginning on page 28, line 26. Octene and ethylene are polymerized in Example III of the

reference (page 31). Since Van Tol et al starts off by only using octene and then goes on to use other monomers in their polymerization process, this is deemed to read on the limitation where the "polymerization performance of the potential catalysts is determined for at least a first monomer as a predictor for the polymerization performance of the potential catalysts for at least a second monomer" of claim 16 and also the limitations of claim 17. Note that Van Tol et al characterize the octane polymer by determining molecular weight and unsaturation (NMR) {Example I} and others by amount of polymer produced {Example II}. The other polymers made by incorporation of other monomers were also characterized. The reference's various classifications of different catalyst's performance while polymerizing different reactions involving olefins other than ethylene (e.g. octane) are within the scope of obtaining " a figure of merit for a particular property" addressing a particular catalysts polymerization performance. This reads on the limitations in instant claims 19, 30, 45, 50 73 and 74. The reactions were quenched to stop the polymerization after a two hour period (page 28, lines 16-18), reading on the limitations of claim 31 and 32. Van Tol et al teach a variety of catalyst systems, see page 33, Table 1 of the reference.

Although, the Van Tol examples only illustrate three different alpha-olefins and three different catalysts it's clear from the reference teaching as a whole that screening multiple alpha-olefins is taught by the reference. See e.g. "at least one" terminology and WO claims 1, 13 and 14 regarding "at least one" terminology related to polymerization and copolymerizations as exemplified. Similarly, although only three catalysts are exemplified, it is clear that the reference teaches the screening of a generic of catalyst candidates greater than 3, and indeed well within the scope of "at least 8 potential polymerization catalysts", as presently claimed. See e.g. abstract definition of catalyst and the WO claims, especially claim 1.

Although teaching parallel polymerization (e.g. page 25, lines 28-35), Van Tol et al lack the specifics of testing an "array of at least 8 potential polymerization catalysts" by "concurrent reaction" (claim 16) and the limitations of claims 24-26, 28, 33, 42 and 43 concerning testing arrays, array format, number of elements in the array and time per assay.

However, the findings of In re Aller should be considered: "where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Moreover, various formats for preparing and testing collections of catalysts were well known in the art at the time of filing.

Willson teaches a multicell holder for assembling and testing large numbers of catalysts as cells, spots or pellets (see Abstract; Figure 1 and page 2, lines 14-29). In preparing Willson's arrays of catalysts, "the catalyst candidate precursors can be deposited...by any convenient technique, preferably by pipette or absorbing stamp...In preferred embodiments, the deposition process will be under robotic control, similar to that used to load multicell plates in biochemical assays" (page 4, top). Willson also teaches that robotic techniques can be employed. The reference teaches that their set-up permits "the scanning of dozens of catalysts in a single set-up, often in less time than required for a single catalysts to be evaluated by conventional methods" (page 2, lines 1-11). Willson also teaches that "[o]nce the catalysts are in place on the support, any suitable technique known to the art can be used to stabilize, and/or activate the particular catalysts chosen" (page 4, bottom). The reference teaches that the invention "has utility with any reaction which can be enhanced by the presence of a catalyst ... including ...polymerization reactions..." (page 5, lines 5-11).

Additionally, Weinberg et al. teaches a method for optimizing (e.g. "figure of merit") polymerization of monomers (e.g. alpha olefins) by parallel screening libraries of 8 or more catalysts in order to discover new catalysts and/or optimize existing catalysts. See abstract; examples, claims. Weinberg teaches that catalysts may be used to polymerize ethylenically and/or acetylenically unsaturated monomers having from 2 to 100,000 carbon atoms, either alone, or in combination. See e.g. col. 14, column 28.

Therefore, it would have been prima facie obvious to one of ordinary skill in the art to use the catalysts and methodology of Van Tol et al in a combinatorial type setting (assay) to make and test arrays of catalysts as taught by Willson and/or Weinberg for polymerization performance based on the results of initial monomer testing (as set forth by Van Tol et al). Weinberg and/or Willson demonstrate that physical and spatial manipulation of catalyst arrays was well known in the art at the time of filing. The techniques for these manipulations result in a more automated work environment. One of ordinary skill would be motivated to use various automated manipulation techniques known to the combinatorial chemistry art (as evidenced by the

teachings of Willson/Weinberg) based on their known advantages. The advantages are specifically taught, for example, in Willson/Weinberg, that is reducing labor costs and time per catalyst screened. The Weinberg reference further teaches high throughput screening for obtaining optimized catalysts for use in BOTH homo- and co- polymerization reactions involving ethylene and higher polymers/copolymers.

Applicant argues that the teachings of Van Tol et al., Willson, and Weinberg et al. do not render the method of the instant claims *prima facie* obvious because neither the teaching of Van Tol et al., the teaching of Willson, nor the teaching of Weinberg et al. teach identifying olefin polymerization catalysts for further testing as required in the claim and conducting a further olefin polymerization reaction with those identified catalysts using different sets of monomers. Thus, the teaching of Van Tol et al. and Willson do not render the method of the instant claims *prima facie* obvious.

Applicant's arguments are not convincing since the combine teachings of Van Tol et al., Willson, and Weinberg et al. do render the method of the instant claims *prima facie* obvious. It is the examiner positions that the step of identifying olefin polymerization catalysts for further testing of claim 16 is part of the "mental step" since it is base on the 'polymerization performance'. Accordingly, the Van Tol et al. reference is consistent with the presently claimed "mental step" of selecting one or more catalysts (e.g. the same catalysts as in the 1st polymerization) based on "polymerization performance" in the first polymerization reaction" and reacting the catalyst(s) with "the first monomer" (e.g. octene in Example I) and the "second monomer" or "higher-order" polymers (i.e. conducting a further olefin polymerization reaction with those identified catalysts using different sets of monomers) as discussed in the rejection. Also, the step of identifying olefin polymerization catalysts for further testing is not claimed in claim 70. Therefore, the combine teaching of Van Tol et al., Willson, and Weinberg et al. do render the method of the instant claims *prima facie* obvious, and the rejection is maintained.

Conclusion

21. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to My-Chau T. Tran whose telephone number is 571-272-0810. The examiner can normally be reached on Monday: 8:00-2:30; Tuesday-Thursday: 7:30-5:00; Friday: 8:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew J. Wang can be reached on 571-272-0811. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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